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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/911,588	07/24/2001	Michael S. Dobres	NOVA-0076	4361

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EXAMINER

HELMER, GEORGIA L

ART UNIT	PAPER NUMBER
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1638

DATE MAILED: 08/14/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/911,588

Applicant(s)

DOBRES ET AL.

Examiner

Georgia L. Helmer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 29 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 and 28-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 and 28-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

***Status of the Claims***

1. The Office acknowledges receipt of Applicants Response; dated 29 May 2003, paper number 20.
2. Applicant has amended claims 1, 7-9, and 15-18, and cancelled claims 21-27 and 35-43. Claims 1-20 and 28-34 are pending.
3. This action is made FINAL necessitated by Applicant's amendment.
4. All rejections not addressed below have been withdrawn.
5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Specification***

6. Applicant is required to update the status (pending, allowed, etc.) of all parent priority applications in the first line of the specification. The status of all citations of US filed applications in the specification should also be updated where appropriate.

***Claim Rejections - 35 USC § 112-second***

7. Claims 1-20 and 28-34 remain rejected under 35 U.S.C. 112-2<sup>nd</sup>. To the extent that this is a new rejection, it is necessitated by Applicant's amendment.

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Claim 1 has been amended to delete "intact", and recite "wherein the cells of the explant are not subjected enzymatic digestion or partial enzymatic digestion of their cell walls".

The claim refers to an "explant", which is by definition tissue removed from a plant, and thereby necessarily damaged, or wounded. However, wounding or damaging plant tissue inherently results in activation of a number of plant responses, including activation of various lytic enzymes. See Buchanan, et al. Biochemistry & Molecular Biology of Plants (2000) American Society of Plant Physiologists, Rockville Md 20855, pages 1142-3, and Figure 21.46. It is suggested that Applicant amend the claim to recite the limitation of "exogenous" in line 6 of the claim. All subsequent recitations of this language are also rejected.

- "the cultured explant" in line 4 lacks antecedent basis.
- Claim 1 is an incomplete method, as the final step of the method does not produce the product claimed.

Applicant traverses, stating primarily that a product is not being claimed, and that what is claimed is a method for transforming a plant ...comprising steps (a) and (b). Due to the use of the transitional phrase "comprising" the claims can encompass additional method steps.

Applicant's traversal has been considered and is unpersuasive because the method claimed is drawn to the transformation of a plant. However the method steps provided do not result in a transformed plant. The use of "comprising" does not add essential steps.

***Claim Rejections - 35 USC § 112, first paragraph***

8. Claims 1-19, and 30-34, remain rejected under 35 U.S.C. 112, first paragraph, for reasons of record.

Applicant traverses, stating primarily that the specification provides abundant guidance (citing specifics from the specification) to those skilled in the art regarding various protocols, media and conditions to practice the claimed invention. And further that the cited reference , Hansen, 1999, is not directed to methods of plant transformation that involve electroporation.

Applicant's traversal has been considered and is unpersuasive because Hansen references to methods of direct DNA transformation, of which electroporation is one example, and it would require undue experimentation by one skilled in the art to practice the cloned invention, as stated in the previous Office Action.

***Claim Rejections - 35 USC § 102***

9. Claims 1-17, 19, 20, 28 and 30-33 remain rejected under 35 U.S.C. 102(b) as being anticipated by Dev et al, US 5,859,327 issued January 12, 1999, as recited below:

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Dev teaches a method for transforming a plant (Abstract, and col 10, lines 23-27) with a transgene, comprising the steps of culturing an intact explant (col 12, line 29) in nutritive medium (col 15, lines 60-66), electroporating the explant with a pulse length of about 50 milliseconds (col 8, lines 58-61 and 65) , to produce a transformed explant, where in the transgene is stably integrated ((Abstract, and col 10, lines 23-27). Dev also teaches a pulse length of 90-250 milliseconds (col 16, lines 40-55), 90-200 ms, and 90-150 (col 16, lines 40-55), and a petunia explant (col 14, lines 66-67). Dev also teaches transformation with at least one structural gene (claim 6, for example) and transformation with a marker gene (claim 10, for example).

Applicant traverses, stating primarily that Dev fails to teach or suggest culturing an explant of the plant that is to be transformed in nutritive medium prior to electroporation.

Applicant's traversal has been considered and is unpersuasive because Dev teaches (column 12, lines 29-34) the maize embryos placed with medium containing KCl, CaCl<sub>2</sub>, Hepes buffer and mannitol pH 7.2, which is a nutritive medium containing salts and a carbon source.

Applicant traverses, stating primarily that the leaf discs cut from the cotyledons were the transformation and the cotyledons themselves were not transformed. Applicant's traversal has been considered and is unpersuasive because the explant referred to is maize embryos, which are transformed.

Accordingly, Dev anticipates the claimed invention.

***Claim Rejections - 35 USC § 103***

10. Claims 1-20 and 28-34 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Dev as discussed above, and further in view of Applicants admitted prior art. Claims 1-17, 19, 20, 28 and 30-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Dev discussed supra. This rejection is recited below:

The teachings of Dev are discussed above. Dev does not teach an IPT gene, the CONSTANS gene, a transgene modifying the flowering response, a member of the GATA1 family of transcription factors, zinc-finger containing transcription factors, the GAI gene and genes for gibberellin signaling proteins, SH2-like transcription factors, transcription factors, and transgenes comprising a signal transduction domain.

Applicants admitted prior art (p22) teaches the CONSTANS gene, a transgene modifying the flowering response, a member of the GATA1 family of transcription factors, zinc-finger containing transcription factors, the GAI gene and genes for gibberellin signaling proteins, SH2-like transcription factors, transcription factors, and transgenes comprising a signal transduction domain. IPT genes for transformation were known as taught at the paragraph bridging pages 14-15.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to substitute the NPT gene of Dev with the CONSTANS gene, a transgene modifying the flowering response, a member of the GATA1 family of transcription factors, zinc-finger containing transcription factors, the GAI gene and

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genes for gibberellin signaling proteins, SH2-like transcription factors, transcription factors, or transgenes comprising a signal transduction domain, or the IPT gene, of Applicant's admitted prior art, for the purpose of , enhancing and controlling the flowering and stalk height characteristics of the ornamental plants taught by Dev. And the number of transgenes or the particular selectable marker would have been a matter of choice. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success.

Applicant traverses, stating primarily that they traverse the rejection because it appears to be based on the assumption that the Dev patent teaches all the limitations of the claims except those noted.

Applicant's traversal has been considered and is unpersuasive because the rejection over Dev under 102 (b) is maintained as recited supra, and the additional limitations would have been obvious as previously stated.

### ***Remarks***

11. No claim is allowed.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



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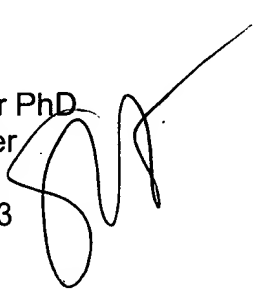
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Georgia L. Helmer whose telephone number is 703-308-7023. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson can be reached on 703-306-3218. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4242 for regular communications and 703-308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Georgia Helmer PhD  
Patent Examiner  
Art Group 1638  
August 11, 2003



  
for Elizabeth McElwain

AMY J. NELSON, PH.D  
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